SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Give an account of the contributions made by Louis Pasteur in the field of microbiology.

17. Explain the different stages of bacterial growth. What are the factors that affect their growth?

18. What are the different mechanisms of action of antibiotics? Explain the resistance mechanism of MRSA.

19. Describe the production of cheese at industrial scale.

20. Which mosquito causes dengue fever? How does dengue differ from malaria?

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APRIL/MAY 2024

23UEBT22 — FUNDAMENTALS OF MICROBIOLOGY (ELECTIVE II)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are endotoxin and exotoxin? Give an example each.

2. Give two examples each of prebiotics and probiotics.

3. What is single cell protein? Give an example of microorganism used for the production of SCP.

4. What is peptidoglycan? How does it differ in the gram positive and gram negative cell walls?

5. What are the primary dyes use in capsule staining? Give an example of capsule positive and capsule negative bacteria.

6. What are the 4 Koch's postulates?

7. Who developed autoclave? What is the standard autoclave temperature?

8. How do the microorganisms avoid host defenses?

9. How are microbes beneficial to biotechnology? Give examples.

10. Name two antibiotics and their clinical use.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What is biofertilizer? How is *Azospirillum* used as a biofertilizer?

Or

(b) Explain the role Bacillus thuringiensis as a bioinsecticide.

12. (a) Who developed the technique for Gram's staining? Write the procedure of Gram's staining method. Mention two examples each of Gram positive and Gram negative bacteria.

Or

(b) What are short term and long term preservation of microbial culture? Briefly explain two methods each.

13. (a) Explain why penicillin is ineffective in ESBL.

Or

(b) Write briefly about the different chemical methods of sterilization.

14. (a) What is the basis for Baltimore classification of virus? List the groups with their characteristics and give examples.

Or

(b) What is the basis for Fritsch's system of classification of algae? List the classes with examples.

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15. (a) What is the causative agent of aspergillosis? What are the symptoms and the different type of lab diagnosis for aspergillosis?

Or

(b) What are the different types of amoebiasis? Explain the life cycle of *Entamoeba histolytica*.